

REPORT ON MACHINERY.

THUR. 1 MAY 1902

Port of *Sunderland*

Received at London Office

No. in Survey held at *Sunderland* Date, first Survey *3rd May 1901* Last Survey *30th April 1902*
 g. Book. on the *Screw Steamer Anna Hermine* (Number of Visits *23*)

Master *J. J. Croiset* Built at *Middlesboro* By whom built *Harkness & Son* (157) Tons { Gross *1219*
 Net *769*
 When built *1902*

Engines made at *Sunderland* By whom made *Mac Coll & Pollock* (68) when made *1902*

Boilers made at *Sunderland* By whom made *Mac Coll & Pollock* when made *1902*

Registered Horse Power Owners *Societe de Navigation L'Aquitaine* Port belonging to *Bordeaux*

Is Refrigerating Machinery fitted *no* Is Electric Light fitted *no*

GINES, &c.—Description of Engines *Triple Expansion* No. of Cylinders *3* No. of Cranks *3*

a. of Cylinders *14.28 1/2 - 46* Length of Stroke *33* Revs. per minute *70* Dia. of Screw shaft *10 1/4* as per rule *10 1/8* as fitted *10 1/8* Lgth. of stern bush *42 1/2*

a. of Tunnel shaft *9* as per rule *9 1/2* as fitted *9 1/2* Dia. of Crank shaft journals *9 1/2* as per rule *9 1/2* as fitted *9 1/2* Dia. of Crank pin *9 1/2* Size of Crank webs *13 1/2 x 6 1/8* Dia. of thrust shaft under

bars *9 1/2* Dia. of screw *12.1 1/2* Pitch of screw *14.1 1/2* No. of blades *4* State whether moveable *no* Total surface *57.6 sq ft*

a. of Feed pumps *2* Diameter of ditto *2 1/2* Stroke *18 1/2* Can one be overhauled while the other is at work *yes*

a. of Bilge pumps *2* Diameter of ditto *2 1/2* Stroke *18 1/2* Can one be overhauled while the other is at work *yes*

a. of Donkey Engines *2* Sizes of Pumps *6 x 8 1/2 x 8 Ballast 6 x 4 x 6 Feed* No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room *2 of 2 1/4 Engine Room 2 of 2 1/4 Stokhold* In Holds, &c. *2 of 2 1/4 each hold*

4 aft well 1 of 2" bilge pump direct a. of bilge injections *1* sizes *3 3/4* Connected to condenser, or to circulating pump *C-P* Is a separate donkey suction fitted in Engine room & size *yes 13*

Are all the bilge suction pipes fitted with roses *yes* Are the roses in Engine room always accessible *yes* Are the sluices on Engine room bulkheads always accessible *yes*

Are all connections with the sea direct on the skin of the ship *yes* Are they Valves or Cocks *Valves*

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates *yes* Are the discharge pipes above or below the deep water line *above*

Are they each fitted with a discharge valve always accessible on the plating of the vessel *yes* Are the blow off cocks fitted with a spigot and brass covering plate *yes*

What pipes are carried through the bunkers *none* How are they protected *yes*

Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times *yes*

Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges *yes*

When were stern tube, propeller, screw shaft, and all connections examined in dry dock *new vessel* Is the screw shaft tunnel watertight *yes*

Is it fitted with a watertight door *yes* worked from *top platform*

BOILERS, &c.—(Letter for record *S*) Total Heating Surface of Boilers *2025 sq ft* Is forced draft fitted *no*

a. and Description of Boilers *one S.E. G.L. Multitubular* Working Pressure *180 lb* Tested by hydraulic pressure to *360 lb*

Rate of test *10.4 02* Can each boiler be worked separately *yes* Area of fire grate in each boiler *59 sq ft* No. and Description of safety valves to

each boiler *two direct Spring* Area of each valve *5.98 sq* Pressure to which they are adjusted *185 lb* Are they fitted with easing gear *yes*

Smallest distance between boilers or uptakes and bunkers or woodwork *15"* Mean dia. of boilers *15'-0"* Length *10'-6"* Material of shell plates *Steel*

Thickness *1 3/16* Range of tensile strength *29/32 T* Are they welded or flanged *no* Descrip. of riveting: cir. seams *D.R. Lap* long. seams *Tri R. D.R. S*

Diameter of rivet holes in long. seams *1 3/16* Pitch of rivets *8 3/4* Lap of plates or width of butt straps *17 1/2*

Percentages of strength of longitudinal joint rivets *86.4 %* Plate Working pressure of shell by rules *184 lb* Size of manhole in shell *16 x 12 in Bk. E. plate*

a. of compensating ring *Flanged* No. and Description of Furnaces in each boiler *3. Deightous* Material *Steel* Outside diameter *4'-8"*

Length of plain part top *yes* Thickness of plates crown *9/16* Description of longitudinal joint *weld* No. of strengthening rings *yes*

Working pressure of furnace by the rules *183 lb* Combustion chamber plates: Material *Steel* Thickness: Sides *19/32* Back *19/32* Top *19/32* Bottom *8/8*

Ch of stays to ditto: Sides *9 x 1 1/2* Back *8 3/4 x 1 1/2* Top *6 x 1 1/2* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *180 lb*

Material of stays *Steel* Diameter at smallest part *1.5"* Area supported by each stay *66.76 sq* Working pressure by rules *180 lb* End plates in steam space:

Material *Steel* Thickness *6/16* Pitch of stays *15" x 15"* How are stays secured *Sh x 16* Working pressure by rules *181 lb* Material of stays *Steel*

Area at smallest part *4.1"* Area supported by each stay *225 sq* Working pressure by rules *182* Material of Front plates at bottom *Steel*

Thickness *3/4* Material of Lower back plate *Steel* Thickness *5/16* Greatest pitch of stays *14"* Working pressure of plate by rules *180 lb*

Diameter of tubes *3 1/4* Pitch of tubes *4 1/2* Material of tube plates *Steel* Thickness: Front *13/16* Back *13/16* Mean pitch of stays *9 x 13 1/2*

Ch across wide water spaces *14"* Working pressures by rules *187 lb* Girders to Chamber tops: Material *Steel* Depth and

Thickness of girder at centre *6 1/4 x 13/16 x (2)* Length as per rule *24 3/4* Distance apart *7 1/2* Number and pitch of Stays in each *ten. 6 1/4 pitch*

Working pressure by rules *181 lb* Superheater or Steam chest; how connected to boiler *none* Can the superheater be shut off and the boiler worked

separately Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet

Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness

Stiffened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed

Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear

DONKEY BOILER— No. *one* Description *Patent Vertical*
 Made at *Aman* By whom made *Cochran & Co* When made *21.2.02* Where fixed *Abkehold*
 Working pressure *90* tested by hydraulic pressure to *180* No. of Certificate *6176* Fire grate area *24 1/4* Description of safety valves *direct Spring*
 No. of safety valves *2* Area of each *3.97* Pressure to which they are adjusted *90 lb* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Dia. of donkey boiler *6'-6"* Length *14'-0"* Material of shell plates *Steel* Thickness *1/2"* Range of tensile strength *27/32* Descrip. of riveting long. seams *Double* Dia. of rivet holes *29/32* Whether punched or drilled *8* Pitch of rivets *2 3/4*
 Lap of plating *4 1/8"* Per centage of strength of joint *69.1%* Rivets *69.3%* Thickness of shell crown plates *7/16* Radius of do. *3'-3"* No. of Stays to do. *Radern*
 Dia. of stays *1/2"* Diameter of furnace Top *2'-7 1/2"* Bottom *✓* Length of furnace *✓* Thickness of furnace plates *19/32* Description of joint *Reveled* Thickness of furnace crown plates *19/32* Stayed by *none* Working pressure of shell by rules *103 lb*
 Working pressure of furnace by rules *101 lb* Diameter of uptake *2 1/2"* Thickness of uptake plates *11/16 + 13/16* Thickness of water tubes *1/4"*

SPARE GEAR. State the articles supplied:—

Two top end bolts & nuts, two bottom end bolts & nuts, two main bearing bolts & nuts, spare coupling bolts & nuts, spare feed & bilge pumps valves, assorted bolts & nuts. Spare propeller.

The foregoing is a correct description,

Manufacturer. *MacLellan & Pollock*

Dates of Survey while building: During progress of work in shops— *1901— May 3, June 19, 28, Sept 13, 18, Oct 2, 14, 18, 24, 25, Nov 9, 15, 19, 22, Dec 5, 1902— Jan 15, 22, 28*
 During erection on board vessel— *July 32, April 10, 11, 30.*
 Total No. of visits *23.*

Is the approved plan of main boiler forwarded herewith *no*
 " " " donkey " " " *no*

General Remarks (State quality of workmanship, opinions as to class, &c.)

Material of screw shaft *Woot Lion* Is the screw shaft fitted with a continuous liner the whole length of the stern tube *no*
 Is the after end of the liner made water tight in the propeller boss *yes* If the liner is in more than one length are the joints burned *✓*
 If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive *✓* If two liners are fitted, is the shaft lapped or protected between the liners *Painted*

The machinery built under Special Survey the material and workmanship found good and efficient

The main boiler & steam pipes tested under hydraulic pressure to 300 lb and found sound & efficient at that pressure.

The engines tried under steam at their working pressures and found Satisfactory

*In my opinion the vessel is worthy of the notation of **REC.M.C** 4.02 in the Register Book*

It is submitted that
 this vessel is eligible for
 THE RECORD - L M C 4:02

The amount of Entry Fee.. £ *2 : 0 :* When applied for, *1 May 1902*
 Special .. £ *19 13 :* When received, *30 April 1902*
 Donkey Boiler Fee .. £ : :
 Travelling Expenses (if any) £ : :

L.S. 1.5.02

Leonard & Hallcross
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

FRI. 2 MAY 1902

Assigned

+ L.M.C. 4.02

MACHINERY CERTIFICATE
 WRITTEN.



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